

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF INTERNAL AFFAIRS
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BUREAU OF TOPOGRAPHIC AND GEOLOGICAL SURVEY
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COAL RESERVES IN CLEARFIELD COUNTY, PENNSYLVANIA

By

John F. Reese

Introduction.

In connection with the "Introduction to the Bituminous Coal Fields of Pennsylvania" now being prepared for publication by the Pennsylvania Geological Survey, coal reserves of the bituminous fields are being computed by Mr. John F. Reese. In order to render this information available at once without waiting for the uncertain date of printing the report, an abstract of Mr. Reese's figures for Clearfield County is given herewith. All of the information readily available at this time has been used in the computation, which followed the methods used by the Land Classification Board of the United States Geological Survey in its valuation of the public coal lands. The results are given by beds for each township. For some beds and for some areas the data are abundant and the results entirely reliable. For other beds and areas the data are meager and the results subject to revision as additional data are obtained. All the data used and the computation sheets are permanently filed so that modifications of the original figures can be made readily when required by additional information.

The figures presented are preliminary and subject to correction for any area when that area shall be studied in detail. In the meantime critical examination of the figures is invited in order that the results may be made as accurate as possible. To that end the Survey will welcome every bit of information not now in its possession. Records of drillings and other data will be kept strictly confidential if so desired, although the Bureau naturally prefers to be able to use data freely.

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Coal Beds.

Clearfield County contains six coal beds that are now of economic interest. In order of present importance as shipping coals they are the Lower Kittanning, Lower Freeport, Upper Freeport, Upper Kittanning, Middle Kittanning, and Brookville.

Lower Kittanning Coal. A good number of measurements are available from the mines on this bed and from its outcrop, making possible a fairly accurate and reliable computation of quantity. Over large areas no information is available as to thickness and persistency, and a general average based on thicknesses in surrounding areas was used.

The Lower Kittanning bed contains the greatest coal reserve, and is the largest producer within the county, yielding more than 4,600,000 tons annually.

Lower Freeport Coal. A fair amount of information as to the thickness and persistency of the bed is available. No information as to the mined out areas of the old abandoned mines in the Philipsburg-Houtzdale area is available and this bed has been considered as practically depleted in Morris, Decatur and Woodward townships.

The Lower Freeport or "Moshannon" coal was for many years the greatest producer within the county, but as computed today is second in size of reserve, and ranks second in production with a total of over 2,900,000 tons annually.

Upper Freeport Coal. The extensive outcrop of this bed throughout the county and the mines in various localities furnish enough measurements to make possible a fairly accurate estimate of quantity.

The Upper Freeport bed is third in size of reserve within the county, and ranks third in production with a total of over 530,000 tons annually.

Upper Kittanning Coal. A fair amount of information as to thickness of this bed was obtained from mines and its outcrop. Little is known as to its thickness and extent over large areas, and only proven areas around mines and drill holes have been computed in this report.

The Upper Kittanning bed is fourth in size of reserve within the county and ranks fourth in production with a total of over 200,000 tons annually.

Middle Kittanning Coal. Data are meagre as to thickness and extent of this bed, and only proven areas contiguous to mines and drill holes have been considered.

As computed, the Middle Kittanning bed is sixth in size of reserve within the county and ranks fifth in production with a total of over 150,000 tons annually.

Brookville Coal. This bed is computed as of economic interest in the townships bordering on Moshannon Creek, in the eastern part of the county and in several others where it is being mined or has been proven by prospecting.

As computed, the Brookville coal is fifth in size of reserve within the county and ranks sixth in production with a total of over 140,000 tons annually.

Method of Computing Reserves.

A base map for each coal bed was made by tracing its outcrop from the geological map of the county made by the Second Pennsylvania Survey, with township boundaries and outcrop lines corrected according to latest maps available. All available measurements of a coal bed, gathered from Federal and State reports, mine maps, core drill records and personal inspections, were plotted on the map of that coal bed at the locality represented. By studying the distribution of the figures, areas of equal thickness were plotted, and by means of a planimeter, an instrument for measuring plane areas, the area of each coal bed in each township was measured. The unit used for calculating the quantity of coal was 90,000 short tons per inch of bed per square mile of area.

Worked-out areas were determined from mine maps and plotted to scale on the base maps. The same method as above was used for computing the quantity of coal extracted.

For some localities, no information is available as to the mined out areas of the various beds computed herein. For those places, an estimate of probable depletion has been made, based on age and size of operation, or on the difference between original areas and statements of acreages remaining unmined.

Having calculated the quantity of coal originally contained within the area of any bed and subtracted the quantity already mined out, the writer determined from engineering experience the probable percentage of each bed which could be recovered in different localities. This varies from 60 to 90 per cent, depending on the thickness and character of the bed. The quantity of coal computed to be in any bed, multiplied by the assumed percentage of recovery, less 15 per cent for loss in mining, gives the estimated recoverable tonnage.

Coal Reserves.

The total area of Clearfield County is 1082.2 square miles.

The result of computing the coal reserves in Clearfield County based on the latest maps, engineering data, and methods is shown in the accompanying tables.



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One table gives the estimated recoverable tonnage by beds and townships. The figures have been given as computed. It should however be distinctly understood that while the acreage of each of the beds has been accurately computed, the reliability of the average thickness of the coals used in the computation of tonnage decreases for the beds in the order following: Lower Kittanning, Lower Freeport, Upper Freeport, Upper Kittanning, Middle Kittanning, and Brookville. Thus, while the figures for the Lower Kittanning bed are conservative and probably reliable, the figures for the Brookville coal may be much too small or many times too large.

Detailed tables of the coal reserves in each township have been prepared and will appear in printed form in the report now being written on the bituminous coal fields of the State. They can be consulted in the office of the Survey; or figures for a single township will be sent on request.

Coal Reserves in Clearfield County in Short Tons.

Bed	Original Deposit	Mined Out	Recoverable
U. Freeport	446,200,000	4,690,000	234,500,000
L. Freeport	1,075,700,000	197,800,000	837,500,000
U. Kittanning	425,500,000	4,160,000	224,200,000
M. Kittanning	192,100,000	1,140,000	106,800,000
L. Kittanning	1,509,600,000	98,790,000	855,300,000
Brookville	342,900,000	1,630,000	207,100,000
Total	3,992,000,000	308,210,000	2,165,400,000

Summary of Recoverable Coal in Clearfield County in short tons

Township	U.Freeport	L.Freeport	U.Kittann'g.	M.Kittann'g.
Beccaria	22,700,000	31,600,000	6,300,000	5,200,000
Bell	24,400,000	53,800,000	47,800,000	2,500,000
Bigler	11,800,000	18,800,000	8,600,000	10,400,000
Bloom	2,000,000	6,900,000	-----	-----
Boggs	-----	2,200,000	1,700,000	-----
Bradford	-----	3,900,000	-----	8,900,000
Brady	4,900,000	63,400,000	9,600,000	6,800,000
Burnside	25,900,000	48,400,000	17,200,000	10,400,000
Chest	24,300,000	33,900,000	37,300,000	21,400,000
Cooper	-----	-----	-----	-----
Covington	-----	-----	-----	-----
Decatur	11,000,000	7,500,000	21,500,000	12,600,000
Ferguson	10,400,000	15,000,000	10,700,000	1,300,000
Girard	9,300,000	6,400,000	-----	-----
Goshen	1,900,000	3,500,000	-----	-----
Graham	-----	1,900,000	-----	-----
Greenwood	6,100,000	9,500,000	8,400,000	-----
Gulich	16,200,000	20,100,000	2,100,000	2,100,000
Huston	-----	-----	-----	-----
Jordan	20,100,000	29,900,000	24,000,000	9,300,000
Karthauss	-----	4,800,000	-----	-----
Knox	10,600,000	22,900,000	1,600,000	3,400,000
Lawrence	3,000,000	14,700,000	2,100,000	7,100,000
Morris	3,200,000	600,000	6,700,000	3,400,000
Penn	10,300,000	31,200,000	-----	-----
Pike	6,400,000	18,600,000	5,300,000	-----
Pine	-----	-----	-----	-----
Sandy	-----	72,100,000	3,700,000	-----
Union	-----	12,000,000	-----	-----
Woodward	10,000,000	3,900,000	9,600,000	2,000,000
Total	234,500,000	537,500,000	224,200,000	106,800,000

Summary of Recoverable Coal in Clearfield County in short tons (con)

Township	L.Kittanning	Brookville	Total
Beccaria	63,900,000	-----	129,700,000
Bell	44,700,000	9,300,000	182,500,000
Bigler	25,400,000	12,700,000	87,700,000
Bloom	-----	1,100,000	10,000,000
Boggs	20,300,000	3,100,000	27,300,000
Bradford	26,200,000	-----	39,000,000
Brady	41,100,000	-----	125,800,000
Burnside	10,200,000	-----	112,100,000
Chest	43,200,000	-----	160,100,000
Cooper	25,000,000	29,800,000	54,800,000
Covington	19,600,000	-----	19,600,000
Decatur	71,700,000	53,900,000	178,200,000
Ferguson	6,700,000	-----	44,100,000
Girard	28,300,000	-----	44,000,000
Goshen	16,100,000	-----	21,500,000
Graham	29,000,000	3,200,000	34,100,000
Greenwood	2,500,000	2,700,000	29,200,000
Gulich	48,400,000	17,900,000	106,800,000
Huston	70,700,000	-----	70,700,000
Jordon	31,500,000	-----	114,800,000
Karthaus	11,000,000	-----	15,800,000
Knox	34,700,000	-----	73,200,000
Lawrence	28,700,000	-----	55,600,000
Morris	28,000,000	30,400,000	72,300,000
Penn	3,800,000	6,000,000	51,300,000
Pike	7,600,000	2,900,000	40,800,000
Pine	3,200,000	-----	3,200,000
Sandy	56,000,000	-----	131,800,000
Union	20,000,000	-----	32,000,000
Woodward	37,800,000	34,100,000	97,400,000
Total	855,300,000	207,100,000	2,165,400,000

